

Work Order ID 158009

Tuesday, March 07, 2017 8:16:28 AM

646.3715
B-158009
REV. A

158009

Page 1

Item ID: 646.3715

Revision ID:

Item Name: Strut Doubler

Start Date: 3/7/2017 Start Qty: 6.00

Required Date: 3/14/2017 Req'd Qty: 6.00

Reference:

Accept

N900040100

Setup Start *NS1*

Stop *NS2*

Cust Item ID:

Customer:

Approvals:

Process Plan:

Date: MAR 07 2017

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
646.3700	A

110

0.00

110

Waterjet

FLOW CNC Waterjet

Memo

1-Cut as per Dwg

Dwg Rev: A

Prog Rev: A

2-Deburr if necessary

0.03

8

02/17/03/12

120

QC2- Inspect parts off machine FAI/FAIB

0.00

120

QC

Quality Control

Memo

0.01

8

02/17/03/12

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
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Misidentified ☐	Past Due ☐																																																																

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Stop ***NS2***

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Required Date: 3/14/2017 Req'd Qty: 6.00

6

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start ***NR1***

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

QC8- Inspect parts - second check

0.00

130

QC

Memo

0.02

Quality Control

MAR 13 2017

140

Outsource process-Anodize per QSI017 4.1.10.1

0.00

140

Outsource4

Memo

80.00

Outsource process - Anodize

Issue P/O to ATG : 35698

1- Black Anodize as per Dwg 646.3700

2- PRIME AS PER DWG, SEE NOTE #2

Certification of Conformity is required

MAR 23 2017

DAS
13
9-09

150

Receive & Inspect for Damage & Mat'l Certs

0.00

150

Packaging

Memo

0.02

Packaging

8x SP17-4-6

DQA: _____ Date: _____



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Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
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Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
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LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
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Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run

Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

QC5- Inspect part completeness to step on W/O

0.00

160

QC

Memo

0.02

Quality Control

*2.5 mils thickness pin*DAS
38
9-89

APR 06 2017

190

Identify as per dwg & Stock Location: *CCK105* 0.00***190***

Packaging

Memo

0.01

Packaging

***IDENTIFY AS PER APICAL MPP-120 BY STAMPING THE P# AND
REV***DAS
6
9-89*8*DAS
41
9-89

APR 09 2017

200

QC21- Final Inspection - Work Order Release

0.00

200

QC

Memo

0.10

Quality Control

DAS
21
9-89*17/4/11 JF*

APR 10 2017

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

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Picklist Print

Tuesday, March 07, 2017 8:16:32 AM

Page 1

Work Order ID: 158009

158009

Parent Item: 646.3715

646.3715

Parent Item Name: Strut Doubler

Start Date: 3/7/2017

Required Date: 3/14/2017

Start Qty: 6.00

Required Qty: 6.00

Comments: IPP REV:A 12.10.22 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6S.040		Purchased	No			110	sf	117.0100	0.0434	0.274105			

M6061T6S 040

6061-T6 .040 Sheet

02/17/03/12

Location

Loc Qty

Loc Code

MAT021

117.01

m135612

25.4

m135632

3.51

m135724

24.1

m136790

64

4

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

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APICAL INDUSTRIES, INC.	ENGINEERING CHANGE NOTICE NO. 03702				SHEET 1 OF 2	
	DWG NO. 646.3700	REV: A	PREPARED BY B. PETERS	DATE: 11/15/12	EFFECT ON DWG ☐ INC. ☒ UNINC.	
	DWG TITLE: SHEETMETAL					
APPROVED BY: ENGR <i>[Signature]</i>		MFG <i>[Signature]</i>	QC <i>[Signature]</i>	EFF: NEXT ORDER		
TRANSACTION CODES (TC): A-ADD C-CREATE R-REVISE D-DELETE		REASON: ADDED ALTERNATE MATERIAL AND REVISED REFERENCE DIMENSIONS			EOR: D-12-010	

SHEET 1, ZONE A2 IS:

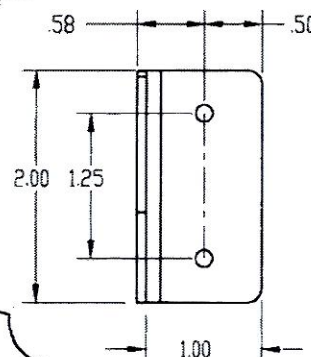
IS

⚠ PRIMARY MATERIAL: ALUMINUM 6061-T6 PER AMS-QQ-A-250/11
ALTERNATE MATERIAL: SS 17-4 PH PER AMS 5604

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

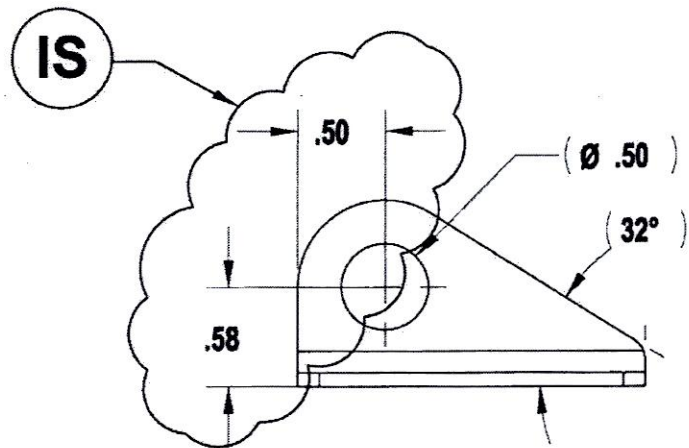
NO. 158009 ML5
1703-07

IS

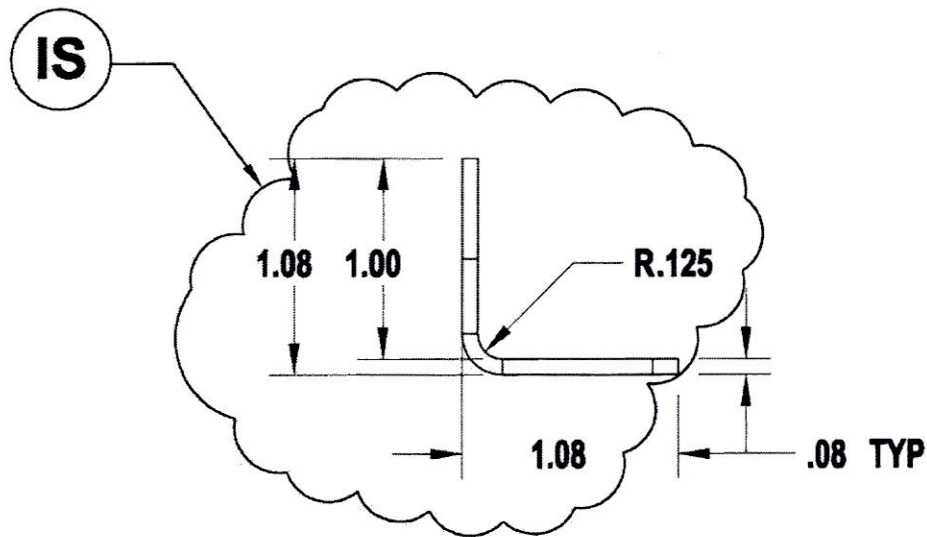


SHEET 7, ZONE B1 IS:

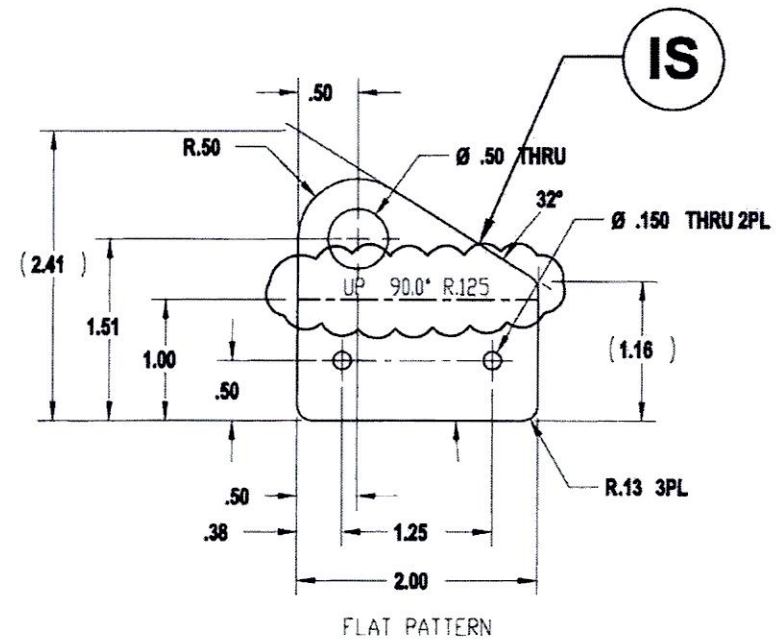
F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL	SPECIFICATION
DOCUMENTS EFFECTED:					CHANGE CATEGORY	DER REVIEW REQUIRED
☐ RFMS ☐ MDL ☐ INSTALL INSTRU ☐ ICA ☐ BDM					☐ MAJOR ☒ MINOR	☐ YES ☒ NO



SHEET 7, ZONE C4 IS:



SHEET 7, ZONE D1 IS:



SHEET 7, ZONE B7 IS:

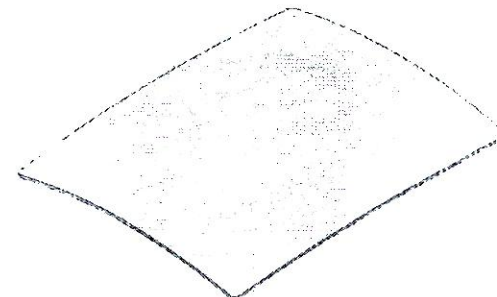
F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL/SPECIFICATION
-----	----	-------------	-----	-------------	------------------------

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REV	DESCRIPTION	DATE	APPROVED
A	INCORPORATED ECN(010)	08/08/00	PER [Signature]

NOTES:

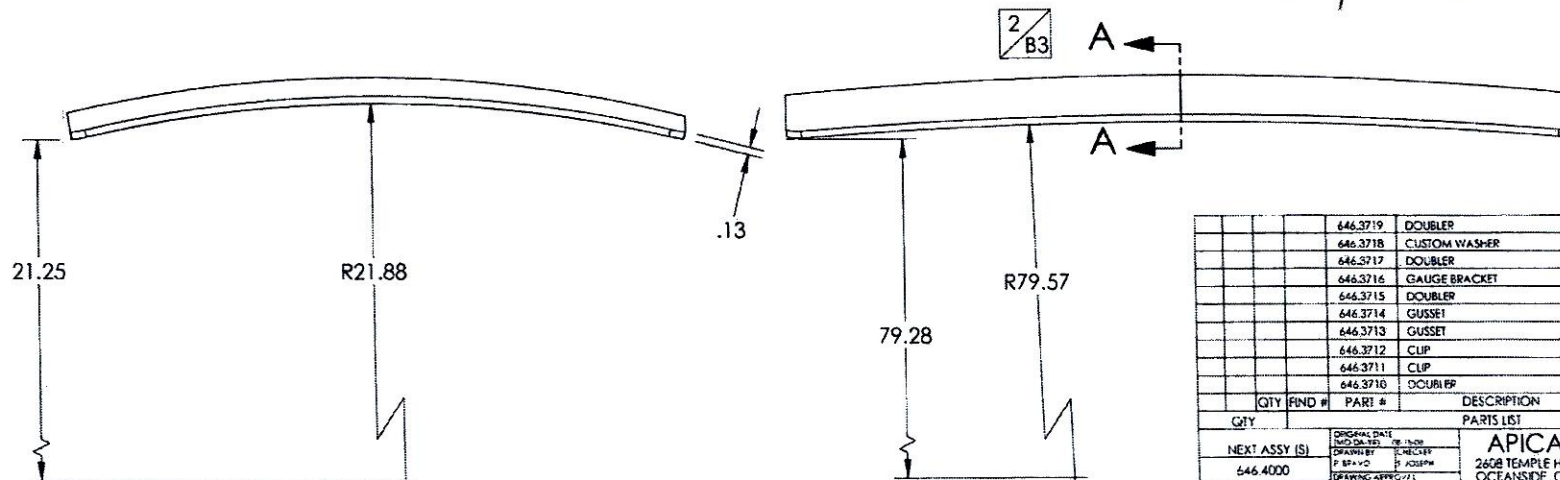
1. MATERIAL: ALUMINUM 6061-T6 PER AMS-QQ-A-250/11
2. FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2, COLOR BLACK; CARDINAL 4860-50 PRETREATMENT PRIMER PRIME IAW MIL-P-23377J TYPE I CLASS N
3. MATERIAL: 17-4 PH AMS 5604, CONDITION H900
4. FINISH: PRIME IAW MIL-P-23377J TYPE I CLASS N
5. DEBURR AND BREAK ALL SHARP EDGES
6. IDENTIFY IAW MPP-120



646.3710

UNINCORPORATED ECN(s)

03702



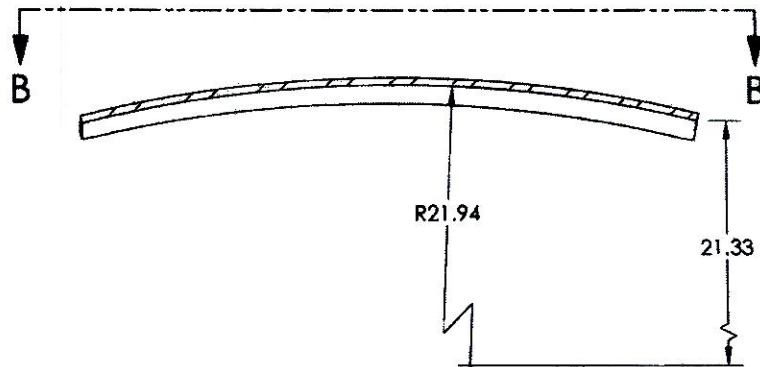
QTY	IND #	PART #	DESCRIPTION	MATL	SPEC.
		646.3719	DOUBLER		
		646.3718	CUSTOM WASHER		
		646.3717	DOUBLER		
		646.3716	GAUGE BRACKET		
		646.3715	DOUBLER		
		646.3714	GUSSET		
		646.3713	GUSSET		
		646.3712	CLIP		
		646.3711	CLIP		
		646.3710	DOUBLER		
QTY	IND #	PART #	DESCRIPTION	MATL	SPEC.
646.4000			DOUBLER		
NEXT ASSY (S)			PARTS LIST		
646.4000			ORIGINAL DATE 08-13-00		
			DRAWN BY [Signature]		
			P. BY [Signature]		
			DESIGNED BY [Signature]		
			CHECKED BY [Signature]		
			CONTRACT NO.		
			DUBBS OTHERWISE SPECIFIED		
			CONFORMING TO THE FOLLOWING		
			SPECIFICATIONS ARE		
			1. PLACE DECIMALS 1.01		
			2. PLACE DECIMALS 1.01		
			3. PLACE DECIMALS 1.01		
			4. PLACE DECIMALS 1.01		
			5. PLACE DECIMALS 1.01		
			6. PLACE DECIMALS 1.01		
			7. PLACE DECIMALS 1.01		
			8. PLACE DECIMALS 1.01		
			9. PLACE DECIMALS 1.01		
			10. PLACE DECIMALS 1.01		
			11. PLACE DECIMALS 1.01		
			12. PLACE DECIMALS 1.01		
			13. PLACE DECIMALS 1.01		
			14. PLACE DECIMALS 1.01		
			15. PLACE DECIMALS 1.01		
			16. PLACE DECIMALS 1.01		
			17. PLACE DECIMALS 1.01		
			18. PLACE DECIMALS 1.01		
			19. PLACE DECIMALS 1.01		
			20. PLACE DECIMALS 1.01		
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			22. PLACE DECIMALS 1.01		
			23. PLACE DECIMALS 1.01		
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			97. PLACE DECIMALS 1.01		
			98. PLACE DECIMALS 1.01		
			99. PLACE DECIMALS 1.01		
			100. PLACE DECIMALS 1.01		

APICAL INDUSTRIES
2608 TEMPLE HEIGHTS DR.
OCEANSIDE, CA. 92056-3512 (760)724-5300

SHEETMETAL

SCALE NONE SHEET 1 OF 9

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SECTION A-A



R395.138

R.13 4PL

13.51

10.49

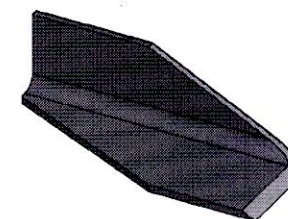
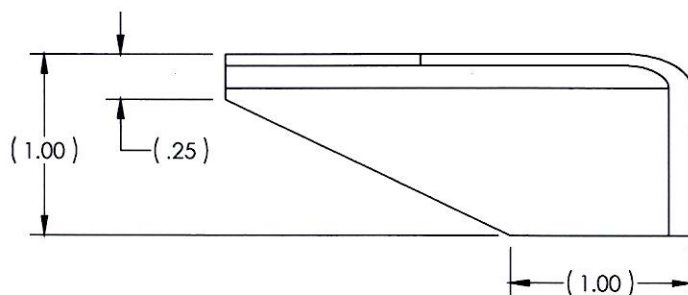
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SECTION B-B

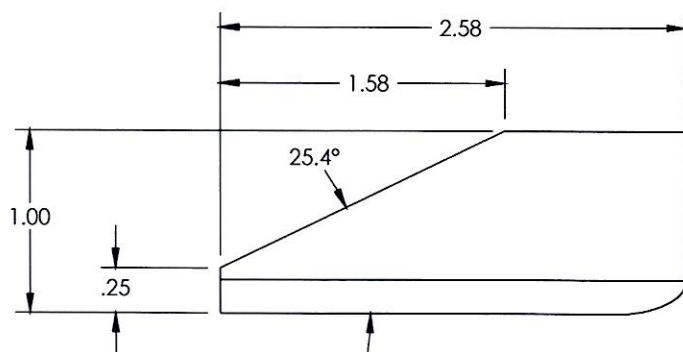
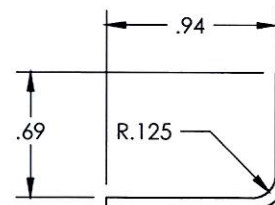
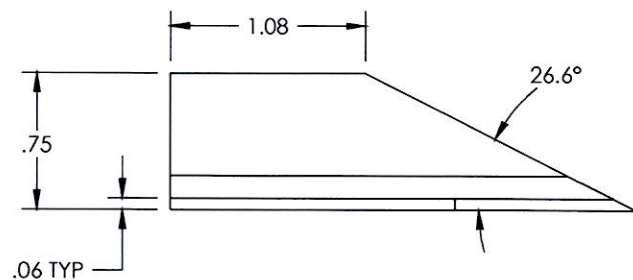
ORIGINAL DATE: 08-18-08 DRAWN BY: J. SCARF P. BRAYO DESIGNED BY: J. SCARF CHECKED BY: J. SCARF CONTRACT NO.		APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.001 3 PLACE DECIMALS ±.005 ANGLES ±.5°		SHEETMETAL 646.3700	REV A
SCALE: NONE		SHEET 2 OF 9	

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



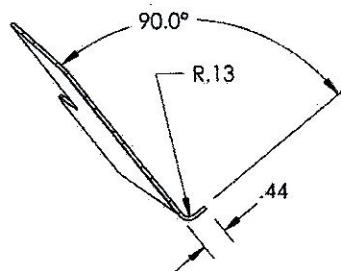
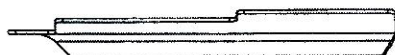
646.3711 SHOWN
646.3712 OPPOSITE



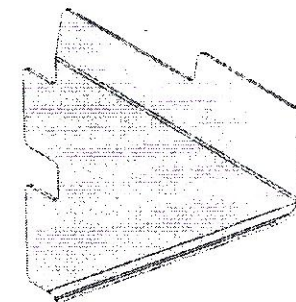
NEXT ASSY (S)	ORIGINAL DATE (D/M/Y)	06-18-08	APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300 SHEETMETAL		
	DRAWN BY	CHECKER			
	P. BRAVO	S. JOSEPH			
	DRAWING APPROVAL S. JOSEPH 06-18-08				
	CONTRACT No.		SIZE CAGE CODE DWG. NO. 646.3700 REV A SCALE: NONE SHEET 3 OF 9		
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.3°					

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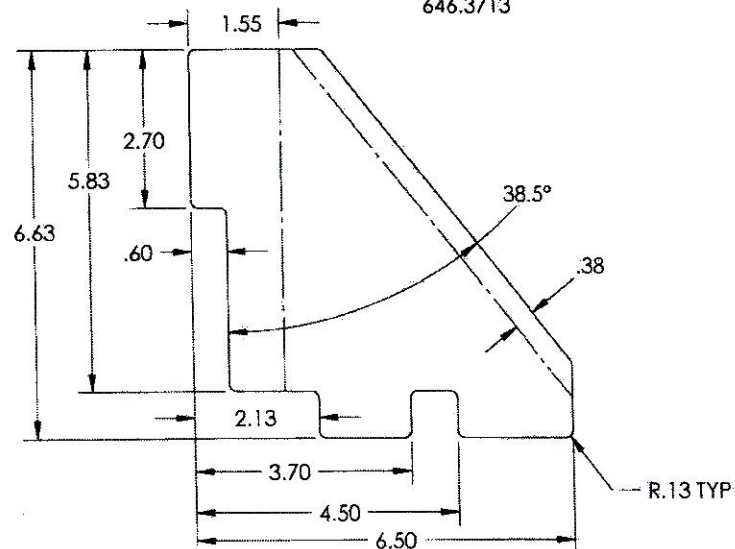
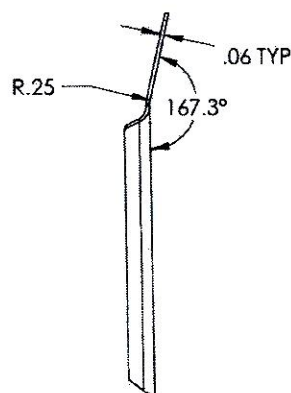
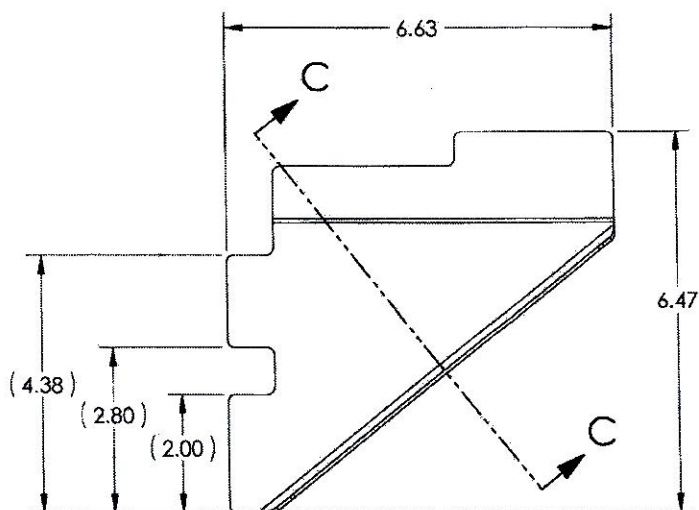
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



SECTION C-C



646.3713

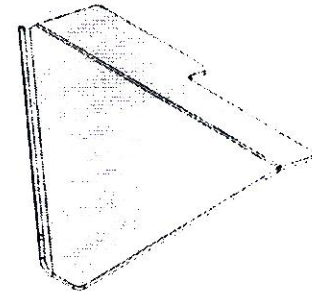
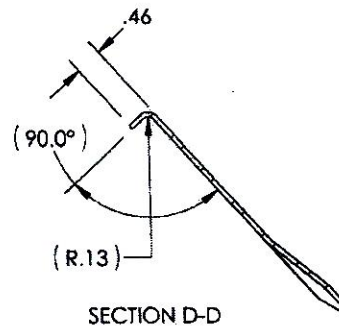
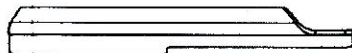


FLAT PATTERN

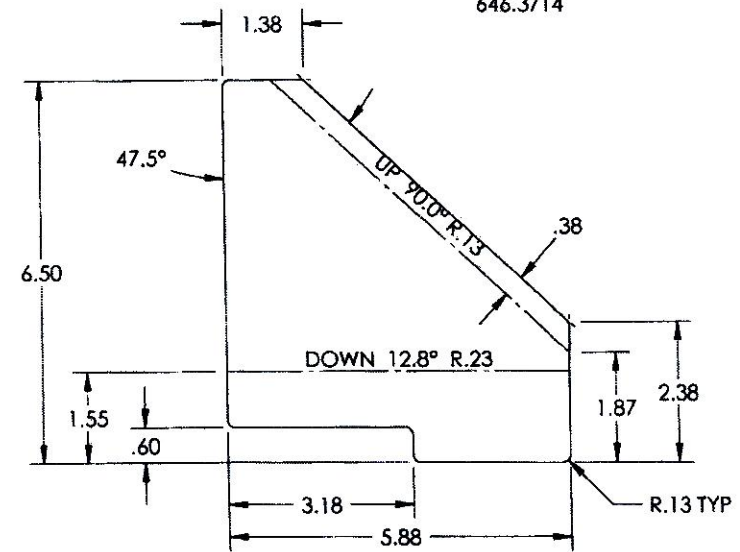
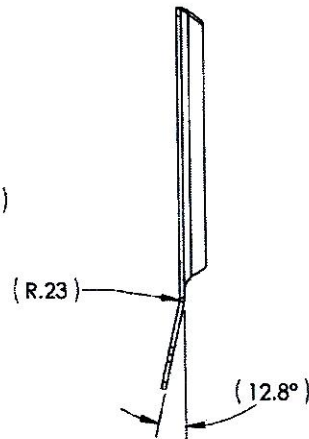
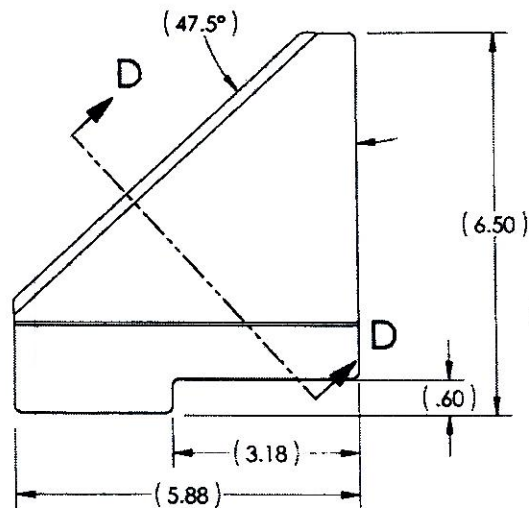
NEXT ASSY (S)	ORIGINAL DATE	08-18-08	APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3312 (760)724-5300 SHEETMETAL	
	DESIGNED BY	ETRICYEN		
	DRAWN BY	S. JOSEPH		
	INSPECTED BY			
	DATE APPROVED		SHEET 4 OF 9 SCALE: NONE	
	DATE			
	DATE			
	DATE			

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REV	DESCRIPTION	DATE	APPROVE



646.3714

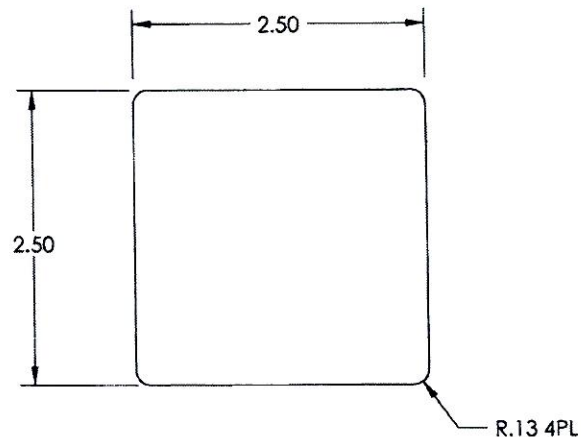


FLAT PATTERN

ORIGINAL DATE 10/20/11 08:00	APICAL INDUSTRIES
DRAWN BY: J. WICKER	2608 TEMPLE HEIGHTS DR.
P. BRAYO: J. JOSEPH	OCEANSIDE, CA. 92056-3512 (760)724-5300
DESIGNED APPROVAL J. JOSEPH	SHEETMETAL
CHECKED BY: J. JOSEPH	
VALUES OVERSHOWN SPECIFIC DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ± .01 1 PLACE DECIMALS ± .005 ANGLES ± .5°	REV: B D7M12 646.3700 A
	SCALE: NONE SHEET 5 OF 9

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



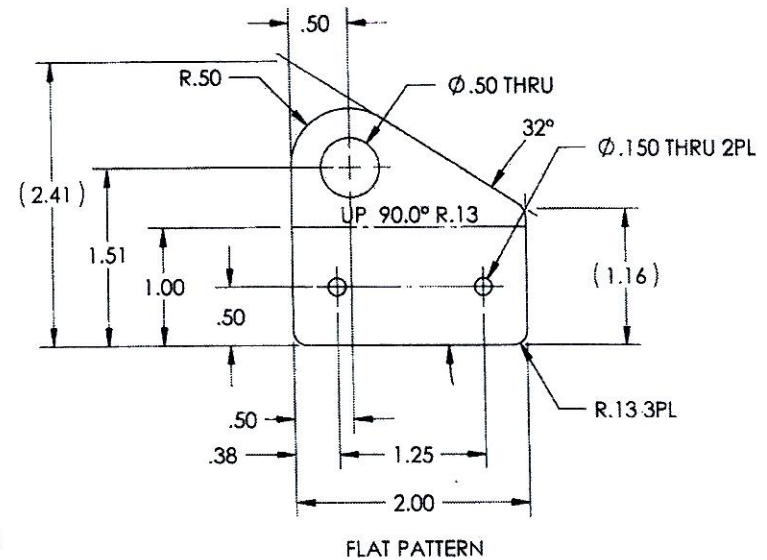
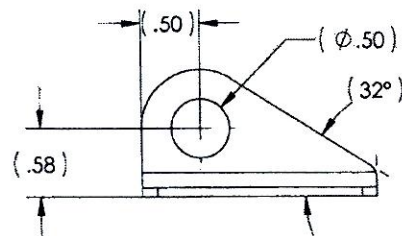
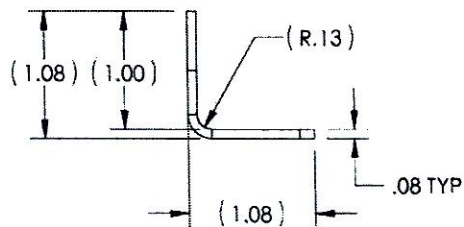
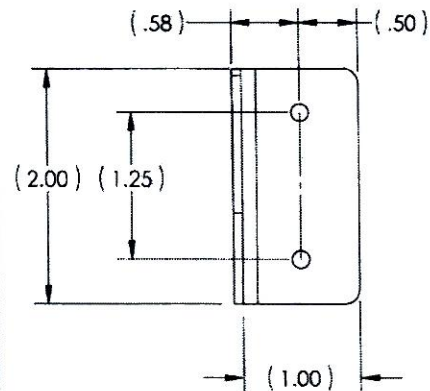
646.3715

NEXT ASSY (S)		ORIGINAL DATE 06-18-89	APICAL INDUSTRIES	
DRAWN BY P. BRAYO		CHECKED BY J. JOSEPH	2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760) 724-5300	
DRAWING APPROVED BY 06-18-89		CONTRACT NO.	SHEETMETAL	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ± .01 3 PLACE DECIMALS ± .005 ANGLES ± .5°		SHEET B	CAGE CODE 077426	DWG. NO. 646.3700
SCALE: NONE		SHEET A OF 2		

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

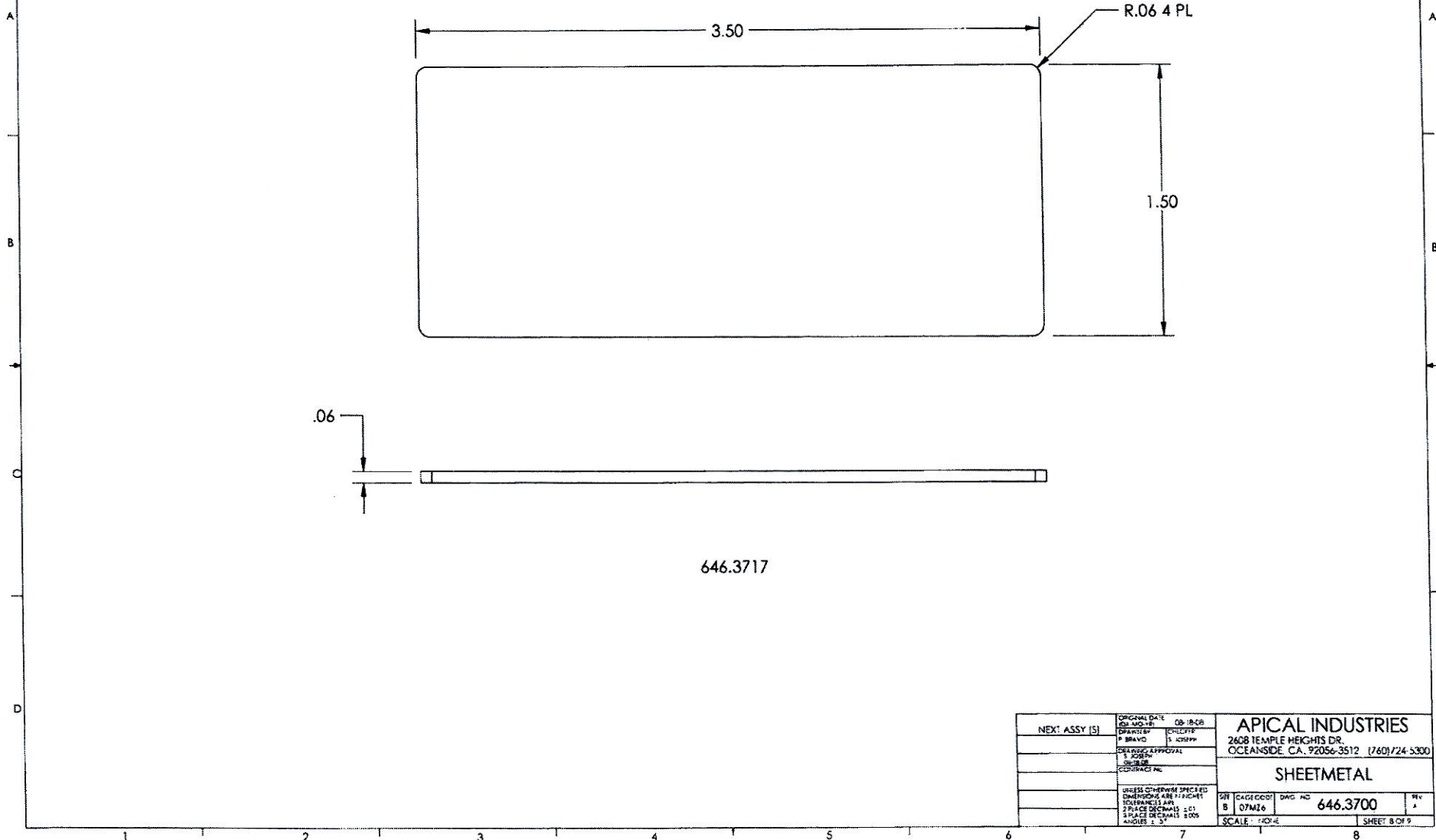
646.3716



NEXT ASSY: 51		ORIGINAL DATE: 08-18-01		APICAL INDUSTRIES	
DRAWN BY: J. JOSEPH		CHECKED BY: J. JOSEPH		2608 TEMPLE HEIGHTS DR.	
DRAWING APPROVAL: J. JOSEPH		DATE: 08-18-01		OCEANSIDE, CA. 92056-3512 (760) 724-5300	
CONTRACT NO.		CAGE CODE: 646.3700		SHEETMETAL	
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. TOLERANCES ARE: 3 PLACE DECIMALS ± .01 2 PLACE DECIMALS ± .005 ANGLES ± .5°		DWG. NO. 646.3700		REV. A	
SCALE: NONE		SHEET 2 OF 2			

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



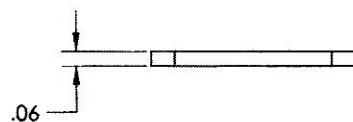
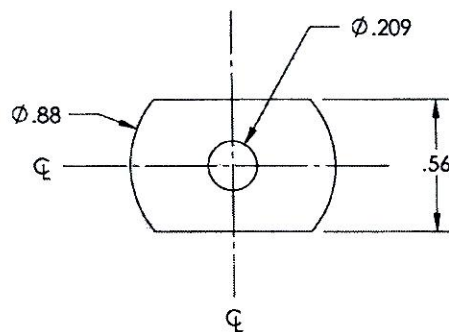
NEXT ASSY IS		ORIGINAL DATE	08-18-08
DRAWN BY		CHECKED BY	
BY		DATE	
DESIGNED BY		APPROVAL	
BY		DATE	
CONTRACT NO.			
UNLESS OTHERWISE SPECIFIED			
DIMENSIONS ARE IN INCHES			
TOLERANCES ARE			
3 PLACE DECIMALS ±.01			
3 PLACE DECIMALS ±.005			
AUGUST 1, 07			
QTY	(PAGE 0001)	DATE	NOV 11 2008
B	07M16	646.3700	REV A
SCALE: 1"=1'-0"		SHEET 8 OF 9	

APICAL INDUSTRIES
2608 TEMPLE HEIGHTS DR.
OCEANSIDE, CA. 92056-3512 (760) 724-5300

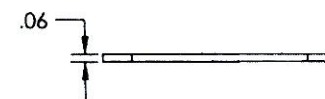
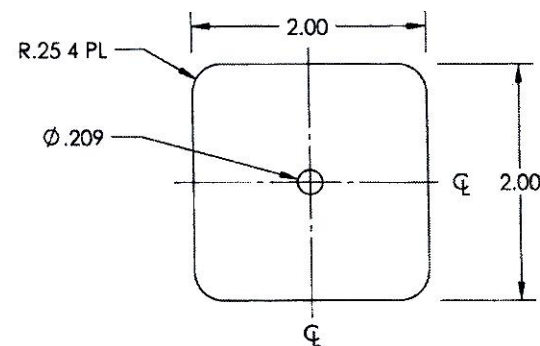
SHEETMETAL

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



646.3718



646.3719

NEXT ASSY (S)		ORIGINAL DATE (MM-DD-YY)	06-18-08
DRAWN BY P. BRAND		CHECKED S. JOSEPH	
DRAWING APPROVAL S. JOSEPH			
CORRECTIONS			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.1°		SHEET B	CLACK CODE D79M26
		DWG NO 646.3700	PPL A
		SCALE: NONE	SHEET 4 OF 4

APICAL INDUSTRIES
2608 TEMPLE HEIGHTS DR.
OCEANSIDE, CA, 92056-3512 (760)724-5300

SHEETMETAL



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO35698**

Purchase Order Date 3/23/2017

PO Print Date 3/29/2017

Page Number 2 of 6

Order From :

A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE ROAD
ROCKLAND, ON K4K 1T2
CANADA

VC-ATG001

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone 613-446-4544

Ship To Contact

Ship To Phone

Ship Via:

Ship Acct:

VENDOR'S TRUCK

Buyer

Customer POID

Customer Tax #

Terms

Currency

FOB

Chantal Lavoie

10127-2607

Net 30

CAD

FCA - (Free Carrier)

Line Total: \$137.55

3 156803

646.3313 UPPER GUIDE
REV.N/C

4/6/2017

10.00

\$13.10

\$131.00

Yes

4/6/2017

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-PRF-23377 TYPE I CLASS N

Line Total: \$131.00

4 158009

646.3715 STRUT
DOUBLER REV- A

4/6/2017

8.00

\$6.25

\$50.00

Yes

4/6/2017

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-PRF-23377 TYPE I CLASS N

Line Total: \$50.00

5 156764

646.3812 GUSSET REV.
N/C

4/6/2017

10.00

\$6.10

\$61.00

Yes

4/6/2017

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-PRF-23377 TYPE I CLASS N

PO Instructions: PRIMER IS SUPPLIED BY DART

Note:

3/29/2017



A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE STREET
ROCKLAND, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 913153

Date: 06-Apr-17

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

Chantal Lavoie
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms		Ship Via	
Quantity	Description		
	PLEASE REFERENCE THE PACK LIST NUMBER ON ALL CORRESPONDENCE TO THIS SHIPMENT. IF YOU HAVE ANY QUESTIONS, PLEASE CALL AT (613) 446-4544.		
6 ea	Part: 649.4817 Shim Hard Black Anodize per MIL-A-8625F, Type III, Class 2 Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied) Job: 20861	Rev: B PO: PO35698	Line: 10
5 ea	Part: 649.4812 Shim Hard Black Anodize per MIL-A-8625F, Type III, Class 2 Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied) Job: 20862	Rev: B PO: PO35698	Line: 11
1 ea	Part: ADMINISTRATION FEE Administrative Fee Job: 20867	Rev: N/A PO: PO35698	Line: 15
10 ea	Part: 646.3313 Upper Guide Hard Black Anodize per MIL-A-8625F, Type III, Class 2 Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied) Job: 20854	Rev: N/C PO: PO35698	Line: 3
8 ea	Part: 646.3715 Strut Doubler Hard Black Anodize per MIL-A-8625F, Type III, Class 2 Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied) Job: 20855	Rev: A PO: PO35698	Line: 4
10 ea	Part: 646.3812 Gusset bracket Hard Black Anodize per MIL-A-8625F, Type III, Class 2	Rev: N/C	



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ROCKLAND, ON K4K 1T2
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Pack List

Number: 913153

Date: 06-Apr-17

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

Chantal Lavoie
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms		Ship Via
Quantity	Description	
	CERTIFICATE OF CONFORMANCE	
	A.T.G. INDUSTRIES INC. CERTIFIES THAT ALL ITEMS IN THIS SHIPMENT CONFORM TO REQUIREMENTS.	
	MADE IN CANADA.	
	8017-4-6	